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New species of the subgenus *Sergentomyia* (Diptera: Psychodidae: Phlebotominae) from East Africa.

by

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Two new species of the subgenus *Sergentomyia* are described, viz. *S. ashfordi* and *S. magnidentata* from Ethiopia and Kenya respectively. Keys to males and females of the known species occurring in East Africa are given.

INTRODUCTION

Species of the subgenus *Sergentomyia* França & Parrot, from Ethiopia, Kenya, Tanzania and Uganda were examined. In addition to the two new species, *S. ashfordi* and *S. magnidentata*, here described, five other species are known to occur there, viz. *S. congolensis* (Bequaert & Walravens 1930), *S. distincta* (Theodor 1933), *S. impudica* (Abonnenc 1967), *S. yusafi* (Sinton 1930) and *S. ruttledgei* (Lewis & Kirk 1946). For terminology used in keys and in text see Davidson (1987, this issue). Keys to the males and females of all the aforementioned species are given.

Material examined is deposited in the British Museum (Natural History) (BMNH), the South African Institute for Medical Research (SAIMR) and Dr D. M. Minter's private collection at the London School of Hygiene and Tropical Medicine, London (DMM),

Genus *Sergentomyia* França & Parrot

Subgenus *Sergentomyia* França & Parrot

Key to East African females

1 Raised setae insertion sockets on abdominal tergite VI present 2
— Raised setae insertion sockets on abdominal tergite VI absent 4
2 Ascoid 3 is 0,025–0,04 mm long 3
— Ascoid 3 is 0,065–0,08 mm long ..... *S. impudica*
3 A3 is 0,017–0,020 mm long; c/b3 is 1,49–2,1; labrum broad, approximately 0,03 mm wide posterior to tapered section (Fig. 1) ..... *S. ashfordi*
— A3 is 0,11–0,17 mm long; c/b3 is 1,0–1,45; labrum narrow, less than 0,02 mm wide posterior to tapered section (Fig. 2) ..... *S. congolensis*
4 Mandibles with 4 very large, broad teeth per 0,01 mm ..... *S. magnidentata*
— Mandibles not as above 5

5 A3 is 0,16–0,25 mm long 6
— A3 is 0,08–0,15 mm long 7
6 Ascoid 3 is 0,03–0,04 mm long; cibarial armature with 38–45 closely packed elongate monomorphic teeth ..... *S. ashfordi*
— Ascoid 3 is 0,065–0,08 mm long; cibarial armature with 16–26 large evenly spaced monomorphic teeth ..... *S. impudica*
7 Apical margin of hypopharynx strongly undulating or with deep indentations forming broad tooth-like structures (Figs 4 & 5) 8
— Apical margin of hypopharynx smooth to weakly undulating (Fig. 3) ..... *S. yusafi*
8 A3 is 0,08–0,09 mm long; labrum 0,10–0,13 mm long; cibarial armature with 45–60 long, fine, closely packed monomorphic teeth ..... *S. ruttledgei*
— A3 is 0,10–0,14 mm long; labrum 0,135–0,19 mm long; cibarial armature with 21–30 teeth, those lateral longer and broader than those median ..... *S. distincta*

Key to East African males.

NOTE: it is difficult to identify males; there is some overlap with measurements; they have been correlated with females based on cibarial armature in conjunction with ascoid and antennal segment 3 and 4 lengths.

1 A3 is 0,08–0,115 mm long; A4 is 0,055–0,07 mm long 2
— A3 is 0,12–0,20 mm long; A4 is 0,07–0,12 mm long 3
— A3 is 0,25–0,30 mm long; A4 is 0,12–0,13 mm long ..... *S. impudica*
2 Labrum 0,10–0,12 mm long; Asc4/A4 is 0,47–0,53. ..... *S. ruttledgei*
— Labrum 0,13–0,15 mm long; Asc4/A4 is 0,35–0,46. ..... *S. magnidentata*
3 Asc3 is 0,03–0,037 mm long – (see distribution and descriptions of cibarial armature of) .. .. *S. pastoriana* or *S. congolensis*
— Asc3 is less than above – (see distribution and descriptions of cibarial armature of) .... *S. distincta*, *S. schoutedeni* or *S. yusafi*

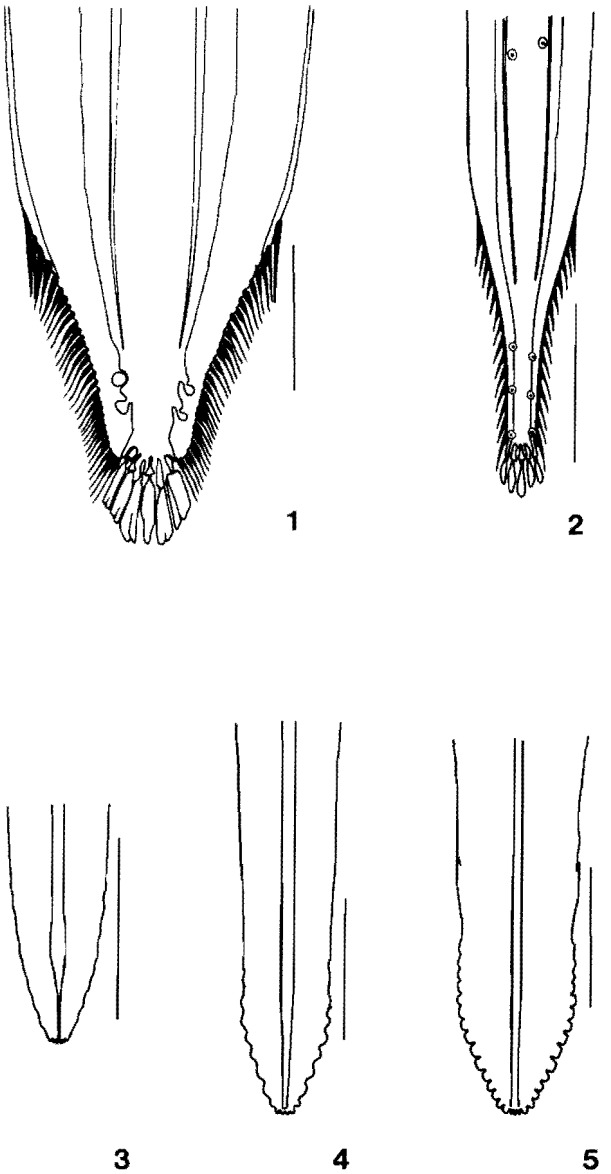
Sergentomyia (Sergentomyia) ashfordi sp. nov., Figs 6–8

FEMALE (10 measured). Wing length 1,9–2,5 mm, breadth 0,35–0,50 mm. Third antennal segment 0,17–0,20 mm long, 0,87–0,97 times as long as segments 4 and 5 together; longest ascoid 0,03–0,045 mm long, 0,16–0,22 times as long as segment; c/b ratio 1,49–2,1. Fourth antennal segment 0,085–0,11 mm long; longest ascoid 0,031–0,04 mm long, 0,3–0,41 times as long as segment; c/b ratio 1,69–2,12. Ascoid formula 2/III–XV. Labrum 0,17–0,195 mm long, third antennal segment 0,94–1,08 times as long as labrum. Actual lengths of palpal segments 2 to 5 are 0,09–0,12; 0,14–0,17; 0,17–0,21 and 0,32–0,44 mm, respectively.

Cibarial armature 0,055–0,062 mm wide with 38–45 closely packed elongate monomorphic teeth; anterior row of spiculate denticles absent. Pigment plate oblong, 0,045–0,055 mm wide, densely pigmented, just overlapping posterior margin of hard palate. Hard palate heavily pigmented laterally and posteriorly; lateral flanges as dark as pigment plate. Pharyngeal pump broad and heavily armed with many long, fine overlapping spines.

Mouthparts. Apical margin of hypopharynx strongly undulating. Labrum very broad, approximately 0,03 mm wide at first postero-lateral labral tip sensilla; labral tip pits almost surrounded by broad labral border. Lateral labral tip sensilla fine; apical sensilla broad and stout. Mandibles very broad, with 6–7 shallow, broad teeth per 0,01 mm.

Raised setae insertion sockets on the midposterior margin of abdominal tergite VI number 0–9.



Figs 1–5. Mouthparts. 1–2. Labral tips. 1. broad labral tip of *S. ashfordi* **sp. nov.** 2. narrow labral tip of *S. congolensis* (Bequaert & Walravens). 3–5. Apical margins of hypopharynges. 3. weakly undulating. 4. strongly undulating. 5. deep indentations. (scale lines 0,025 mm).

MALE (8 measured). Wing length 1,9–2,4 mm, breadth 0,33–0,45 mm. Third antennal segment 0,20–0,235 mm long, 0,84–0,93 times as long as segments 4 and 5 together; ascoid 0,027–0,031 mm long, 0,12–0,14 times as long as segment; c/b ratio 2,42–2,73. Fourth antennal segment 0,115–0,13 mm long; ascoid 0,028–0,034 mm long, 0,23–0,28 times as long as segment; c/b ratio 2,65–3,34. Ascoid formula I/III–XV. Labrum 0,175–0,195 mm long, third antennal segment 1,14–1,26 times as long as labrum. Actual lengths of palpal segments 2 to 5 are 0,10–0,12; 0,13–0,17; 0,17–0,20 and 0,23–0,39 mm, respectively.

Cibarial armature 0,038–0,045 mm wide with 27–35 short closely packed monomorphic teeth; anterior row of spiculate denticles present. Pigment plate oval, 0,018–0,023 mm wide, lightly pigmented. Pharyngeal pump armed with many strongly serrated transverse ridges.

Style 0,12–0,14 mm long bearing 4 stout spatulate spines, two apical and two dorso-subapical; ventral accessory seta originating ventral to dorso-subapical spines. Paramere 0,18–0,23 mm long, with a number of short and very long stiff setae for three-eighths of its length. Aedeagus dark, slender, 0,09–0,11 mm long. Genital pump 0,10–0,11 mm long with filaments 3,7–4,5 times its length.

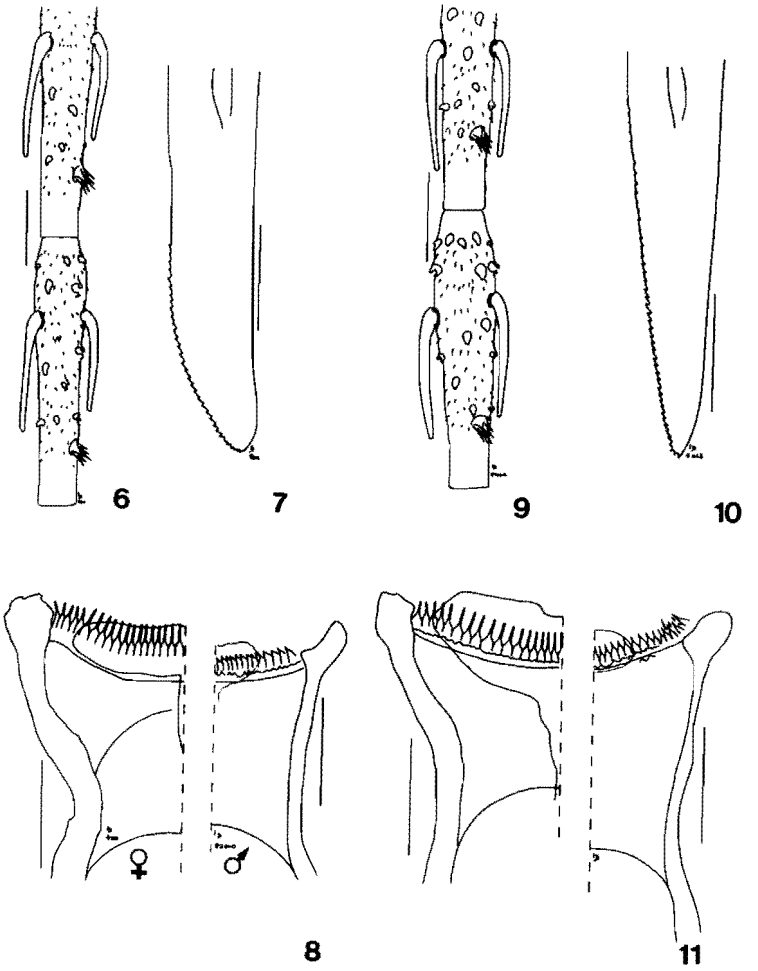
MATERIAL EXAMINED. (All material collected by R. W. Ashford.) Type material. Holotype ♀, ETHIOPIA: Kutaber, v.1971, (Lot 2) (BMNH, No 1101). 9 ♀ 8 ♂ Paratypes (♀ Nos 1100, 1102–1109; ♂ Nos 2040–2047): ETHIOPIA: 2 ♀ 3 ♂, data as holotype, (Lot 2, 6) (BMNH, SAIMR); 1 ♂, Kutaber area, 1971 or before, porcupine cave, 2400 m, (BMNH); 4 ♀, entrance to Gibi Gorge, 1459 m, 8.iv.1972, (BMNH); 2 ♀ 3 ♂, Ochello, vi.1972, (BMNH, SAIMR); 1 ♀, Dessie road at 295 km, 15.vi.1971, 1420 m, (BMNH); 1 ♂, Shoa, Dessie road at 251 km, 15.vi.1971, 1420 m, (BMNH).

Other specimens excluded from type series. ETHIOPIA: 5 ♂, Kutaber, v.1971, (Lot 5, 6) (BMNH); 4 ♀, 60 km E Harrar, rock holes in river bank, 1.ix.1968, (BMNH, SAIMR); 1 ♀, Langano, 18.ii.1973, (BMNH); 1 ♀, Tadella area, 4.xi.1971, (BMNH); 1 ♀, Wollo, Labibela church, 16.xi.1968, (BMNH); 2 ♀, entrance to Gibi Gorge, 4.xi.1970, 1450 m, (BMNH); 1 ♂, Addis Ababa, Gulele, 8.v.1971, 2500 m, (BMNH); 1 ♂, 67 km N Jimma, 16.i.1972, (BMNH); 3 ♀, Ochello, 30 km N Arba Minch, 19.iii.1972, 2199 m, (BMNH).

COMMENTS. This species has only been found in Ethiopia and is probably restricted to rocky habitat above 1400 m above sea-level. It can only be confused with *S. congolensis* (Figs 9–11) from which it can be differentiated using a number of characters. In females the labral tip of *S. ashfordi* is very broad (Fig. 1) compared with that of *S. congolensis* which is long and narrow (Fig. 2); the mandibles are broad with 6–7 shallow broad teeth per 0,01 mm whereas those of *S. congolensis* are long and narrow with 6–7 small recurved denticles per 0,01 mm; antennal segments 3 and 4 are longer than those of *S. congolensis*, those of the latter measuring 0,11–0,17 mm (♀), 0,13–0,20 mm (♂), and 0,06–0,09 mm (♀), 0,08–0,12 mm (♂) long respectively. This species is named for Dr R. W. Ashford of the Liverpool School of Tropical Medicine who collected the material while conducting research on leishmaniasis in Ethiopia.

Sergentomyia (Sergentomyia) magnidentata sp. nov., Figs 9–11

FEMALE (10 measured). Wing length 1,45–1,65 mm, breadth 0,33–0,40 mm. Third antennal segment 0,084–0,099 mm long, 0,77–0,88 times as long as segments 4



Figs 6–11. *Sergentomyia* species. 6–8. *S. ashfordi* **sp. nov.** 6. ♀ antennal segments 3 and 4. 7. ♀ mandible. 8. cibaria. 9–11. *S. congolensis* (Bequaert & Walravens). 9. ♀ antennal segments 3 & 4. 10. ♀ mandible. 11. cibaria. (scale lines 0,025 mm).

and 5 together; longest ascoid 0,023–0,035 mm long, 0,27–0,39 times as long as segment; c/b ratio 0,8–1,09. Fourth antennal segment 0,05–0,06 mm long; longest ascoid 0,029–0,035 mm long, 0,57–0,70 times as long as segment; c/b ratio 0,86–1,16. Ascoid formula 2/III–XV. Labrum 0,16–0,185 mm long, third antennal segment 0,48–0,59 times as long as labrum. Actual lengths of palpal segments 2 to 5 are 0,07–0,09; 0,10–0,12; 0,12–0,15 and 0,20–0,28 mm, respectively.

Cibarial armature 0,038–0,043 mm wide with 24–32 evenly spaced teeth, those median smaller and shorter than those lateral; anterior row of spiculate denticles

absent. Pigment plate large, 0,032–0,041 mm wide, with posterior region for a width of 0,05 mm convexly curved and strongly pigmented; anterior region lightly pigmented and overlapping posterior margin of hard palate. Posterior margin of hard palate as dark as lateral flanges. Pharyngeal pump broad and heavily armed with many fine overlapping long spines.

Mouthparts. Apical margin of hypopharynx strongly undulating. Tapered labral tip appears short; lateral sensilla fine with apically 2 broad median sensilla. Mandibles armed with 4 very large broad teeth per 0,01 mm.

Raised setae insertion sockets on midposterior margin of abdominal tergite VI absent.

MALE (10 measured). Wing length 1,28–1,5 mm; breadth 0,27–0,34 mm. Third antennal segment 0,092–0,115 mm long, 0,73–0,84 times as long as segments 4 and 5 together; ascoid 0,021–0,029 mm long, 0,22–0,3 times as long as segment; c/b ratio 1,14–1,52. Fourth antennal segment 0,057–0,069 mm long; ascoid 0,023–0,03 mm long, 0,35–0,46 times as long as segment; c/b ratio 1,35–1,78. Ascoid formula I/III–XV. Labrum 0,13–0,15 mm long, third antennal segment 0,69–0,79 times as long as labrum. Actual lengths of palpal segments 2 to 5 are 0,06–0,08; 0,09–0,11; 0,11–0,14 and 0,20–0,27 mm, respectively.

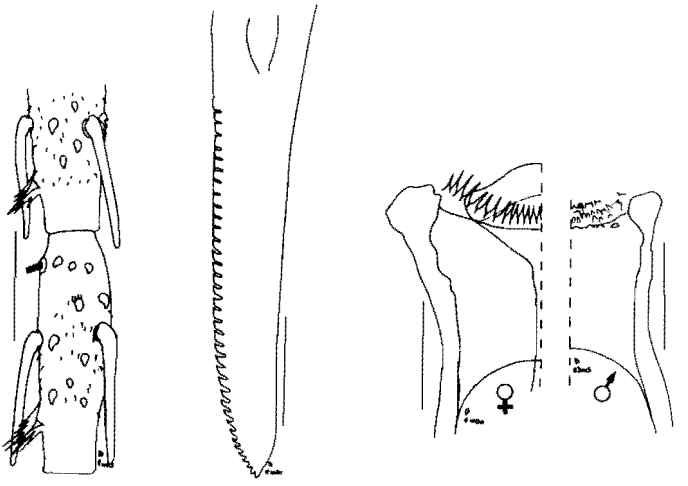
Cibarial armature 0,025–0,033 mm wide with a row of 16–22 irregular short, stout teeth; posterior to these a second row composed of irregular spiculate denticles is present and on the posterior margin of the hard palate a few tooth-like eruptions are evident. Pigment plate not apparent. Pharyngeal pump armed with many finely serrated transverse rows.

Style 0,05–0,07 mm long bearing apically 4 long stout spatulate spines; ventral accessory seta originates at approximately two-thirds the length of the style. Paramere 0,08–0,11 mm long, with a number of long stiff setae and a few shorter setae. Aedeagus dark, broad, 0,05–0,06 mm long. Genital pump 0,04–0,06 mm long with filaments 2,86–3,72 times its length.

MATERIAL EXAMINED. Type material. Holotype ♀, KENYA: Kitui, Kauriro, 23.xi.1965, ex latrine, D. M. Minter (BMNH, No 1050). 9♀ 10♂ Paratypes, (♀ Nos 1051–1059; ♂ Nos 3000–3003, 3005, 3009–3013): KENYA: 6♀ 5♂, Chanani, 1976, tube 22, R. B. Highton (SAIMR, BMNH); 2♀ 3♂, Chanani, x.1976, termitary and tree holes, R. B. Highton (BMNH); 1♀ 2♂, Tseikuru, 17.i.1972, termite hill, J. M. Roberts (BMNH).

Other specimens excluded from type series. KENYA: 40♀, Chanani, 1976, tube 22, R. B. Highton (BMNH); 22♀ 4♂, Chanani, x.1976, termitary (various tubes), R. B. Highton (BMNH); 7♀ 1♂, Chanani, x.1976, tree holes (various tubes), R. B. Highton (BMNH); 3♀, Chanani, x.1976, R. B. Highton (BMNH); 3♀, Galole, houses, 27.v.1963, D. M. Minter (DMM).

COMMENTS. This species has only been found in Kenya. It cannot be confused with any other species as the size of the mandibular teeth are diagnostic. It may superficially resemble *S. yusafi* based on pigment plate shape and antennal segment length. Labrum length is also diagnostic. This species takes its name from its very large mandibular teeth.



Figs 12–14. *Sergentomyia magnidentata* **sp. nov.** 12. ♀ antennal segments 3 & 4. 13. ♀ mandible. 14. cibaria. (scale lines 0,025 mm).

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